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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/740,194	12/18/2000	Frank T. Smith	00-052-TAP	4955

7590 08/11/2004

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EXAMINER

CASTRO, ANGEL A

ART UNIT	PAPER NUMBER
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2653

DATE MAILED: 08/11/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/740,194

Applicant(s)

SMITH ET AL.

Examiner

Angel A Castro

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 11-35 is/are rejected.
- 7) ☒ Claim(s) 9 and 10 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Specification

1. The following is a quotation of 37 CFR 1.71(a)-(c):
 - (a) The specification must include a written description of the invention or discovery and of the manner and process of making and using the same, and is required to be in such full, clear, concise, and exact terms as to enable any person skilled in the art or science to which the invention or discovery appertains, or with which it is most nearly connected, to make and use the same.
 - (b) The specification must set forth the precise invention for which a patent is solicited, in such manner as to distinguish it from other inventions and from what is old. It must describe completely a specific embodiment of the process, machine, manufacture, composition of matter or improvement invented, and must explain the mode of operation or principle whenever applicable. The best mode contemplated by the inventor of carrying out his invention must be set forth.
 - (c) In the case of an improvement, the specification must particularly point out the part or parts of the process, machine, manufacture, or composition of matter to which the improvement relates, and the description should be confined to the specific improvement and to such parts as necessarily cooperate with it or as may be necessary to a complete understanding or description of it.
2. The specification is objected to under 37 CFR 1.71 because the subject matter of claims 1 and 16 is not fully disclosed. The limitation of claims 1 and 16 regarding that the module is mobile or self-locomotive has not been disclosed in sufficient detail to allow a person skilled in the art to carry out the invention.

Drawings

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the subject matter of claims 16-21 and 24-26 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-21 are rejected under 35 U.S.C. '112, first paragraph, as directed to subject matter which was not described in the specification in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention. See previous paragraph.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-35 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is not clear from claim 1 how the parallel rows of configurable instances of tracks can be configured if they are parallel and attached to the housing. It is not clear from claims 8 and 25 how “the bridge tracks can be connected and disconnected from the module independently of each other.” If they are connected to each other they cannot be disconnected independent of each other. Regarding claim 16, it is not clear what is the meaning of means for self-locomotion for the removable-unit storage module. Regarding claim 22, it is not clear how the bridge tracks allow robotic hands to move between tracks. It is also not clear if the bridge tracks are the same as the tracks or are different.

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Claim 5 recites the limitation "the parallel tracks" in line 2. There is insufficient antecedent basis for this limitation in the claim.

An exhaustive search of indefinite and/or ambiguous language has not been attempted, but only exemplified in the preceding paragraphs. Therefore the applicant is responsible for a thorough review of all the claims to make corrections as appropriate.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 1-4, 6, 12-16, 22 are rejected under 35 U.S.C. 102(e) as being anticipated by Williams (U.S. Pat. 6,488,462).

Regarding claim 1, as far as it is understood, Williams discloses a removable-unit storage module 11 (figures 1-10), comprising:

a housing 12;

storage cells 14 arranged within the housing;

robotic hands 50 to retrieve objects from the storage cells; and

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substantially parallel rows 54, 58 of configurable instances of tracks attached to the housing on which the robotic hands can travel;

wherein the module is mobile (see casters 44 in figure 2).

Regarding claim 22, as far as it is understood, Williams discloses a removable-unit storage network, comprising:

multiple removable-unit storage modules 11; and

bridge tracks 88 which connect the storage modules;

wherein the bridge tracks allow robotic hands 68 to move between tracks.

Regarding claim 2, Williams shows that multiplicities of such modules are configured to work as an organized array (see figure 2).

Regarding claim 3, Williams discloses that storage cells, robotic hands and tracks are on both sides of the module 11 (see figure 2).

Regarding claim 4, Williams shows an elevator mechanism for moving robotic hands from one row of tracks to another (figure 3).

Regarding claim 6, Williams shows bridge tracks to connect the rows of tracks on opposite sides of the module (see figure 2).

Regarding claim 12, Williams discloses that the robotic hands move in one direction each row of tracks (see figure 3).

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Regarding claims 13 and 14, Williams discloses that the storage cells hold data storage devices 20 (see figure 2, the tape cartridges are inventory items).

Regarding claim 15, Williams shows that the storage cells are arranged in a rule based structure within the housing (columns and rows as seen in figure 2 and column 5, lines 19-25).

Regarding claim 16, as far as it is understood, Williams discloses means for self-locomotion (in the case of the cartridge handling mechanism 16 see column 4, lines 35-45).

9. Claims 1, 16-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Toumbas (U.S. Pat. 5,940,356).

Regarding claim 1, as far as it is understood, Toumbas discloses a removable-unit storage module (figures 1-63), comprising:

a housing (figure 11);

storage cells 5 arranged within the housing (figure 17);

robotic hands to retrieve objects from the storage cells (figure 52); and

substantially parallel rows 15 of configurable instances of tracks attached to the housing on which the robotic hands can travel;

wherein the module is mobile (column 2, lines 51-54).

Regarding claim 16, Toumbas discloses means for self-locomotion (in the case of the cartridge handling mechanism ZC see column 4, lines 58-67).

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Regarding claim 17, Toumbas discloses an automatic guidance system (column 2, lines 27-33).

Regarding claim 18, Toumbas discloses means to continue module activity as part of a storage array while the module is in motion (column 2, lines 47-54).

Regarding claim 19, Toumbas discloses means to continue module activity independent of the original array of storage modules while in transition to membership in a new array (column 7, lines 34-41).

Regarding claim 20, Toumbas discloses manual remote control guidance (column 2, lines 24-27).

Regarding claim 21, Toumbas discloses an external skin and frame to prevent the robotic hands from snagging objects (see figure 11).

10. Claims 22-26 are rejected under 35 U.S.C. 102(e) as being anticipated by Luffel et al (U.S. Pat. 6,222,699).

Regarding claim 22, Luffel et al discloses a removable-unit storage network (see figure 5), comprising:

multiple removable-unit storage modules 226; and

bridge tracks 260 which connect the storage modules;

wherein the bridge tracks allow robotic hands 236 to move between tracks.

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Regarding claim 23, Luffel et al discloses that the bridge tracks 260 allow robotic hands 236 to move between tracks on different storage modules and retrieve units from the modules (see figure 5).

Regarding claims 24-25, Luffel et al discloses that the bridge tracks can be connected to and disconnected from the module dynamically (see figure 3 where the bridge tracks of elevator 112 connect and disconnect from the module dynamically and independently).

Regarding claim 26, Luffel et al shows that the bridge tracks can be connected and disconnected from the module together as a column (see figures 3 and 5).

11. Claims 1 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Pignataro (U.S. Pat. 5,595,263).

Regarding claim 1, as far as it is understood, Pignataro discloses a removable-unit storage module 11 (figures 1-4), comprising:

a housing 45, 48;

storage cells 39 arranged within the housing;

robotic hands 51 to retrieve objects from the storage cells; and

substantially parallel rows 50 of configurable instances of tracks attached to the housing on which the robotic hands can travel;

wherein the module is mobile (see column 4, lines 29-33).

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Regarding claim 5, as far as it is understood, Pignataro discloses the parallel track spiral around the module from bottom to top (see figure 4).

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 27-35, are rejected under 35 U.S.C. 103(a) as being unpatentable over Luffel et al in view of Korngiebel et al (U.S. Pat. 5,416,914).

Regarding claims 27-35, Luffel et al discloses the removable-unit storage network described above. Luffel et al does not specifically disclose meta data within each module, which contains information about the resources available to that module at a given time. Korngiebel et al discloses a removable-unit storage network (figures 1-2) comprising two modules 111, 112, with meta data within each module which contains information about the resources available to that module at a given time, contents of the meta data associated with the module (column 6, lines 17-31 and column 3, lines 66-68). It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the removable-unit storage network of Luffel et al with the meta data and its characteristics as taught by Korngiebel et al.

The rationale is as follows: one of ordinary skill in the art would have been motivated to provide the removable-unit storage network of Luffel et al with the meta data and its characteristics as taught by Korngiebel et al as it would allow to create and maintain an inventory of removable media units in a dynamic and hierarchical manner.

14. Claims 7-8 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Williams in view of Luffel et al.

Regarding claims 7-8 and 11, Williams discloses the removable-unit storage module described above. Williams does not disclose that the bridge tracks can be connected and disconnected dynamically or independently or as a column. Luffel et al discloses a removable-unit storage module where the bridge tracks can be connected and disconnected dynamically or independently or as a column (see figures 3 and 5 where the bridge tracks can perform as claimed). It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the removable-unit storage module of Williams with the bridge tracks that can be connected and disconnected dynamically or independently or as a column as taught by Luffel.

The rationale is as follows: one of ordinary skill in the art would have been motivated to provide the removable-unit storage module of Williams with the bridge tracks that can be connected and disconnected dynamically or independently or as a column as taught by Luffel as doing this would reduce the time of transfer of a cartridge between modules.

Allowable Subject Matter

15. Claims 9-10 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Winkler (U.S. Pat. 6,602,037) discloses a system for picking articles; Carpenter (U.S. Pat. 6,304,798) discloses an automated data storage library; Ostwald et al (U.S. Pat. 6,262,863) discloses an automated storage library; Suekane et al (U.S. Pat. 5,174,707) discloses a three dimensional assembly plant; Faber et al (U.S. Pat. 4,504,936) discloses a modular data storage system; Hollenbach (U.S. Pat. 3,727,778) discloses a material handling system; Hagel (U.S. Pat. 3,664,523) discloses a vehicle parking apparatus.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Angel A Castro whose telephone number is 703-308-8435. The examiner can normally be reached on Monday through Thursday, 8 AM to 6 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William R Korzuch can be reached on 703-305-6137. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "Angel Castro C". The signature is fluid and cursive, with a large initial "C" at the end.

Angel Castro, Ph.D.